REMARKS

1. Claims 1-3, 5, 7-19, 21-31, 33-43 and 45 are pending and stand rejected. This communication amends claims 1, 9, 11, 15, 23, 25, 29, 37, 39, 41 and 45. Reconsideration of this application is respectfully requested.

2. It is noted that the Office Action acknowledges the receipt of the formal drawings mailed on August 30, 2001 (filed September 4, 2001). In the Examiner's previous Office Action dated February 13, 2004, the drawings were objected to because certain reference numerals in Figures 4 and 6c of the drawings were not mentioned in the specification. In response, Applicants submitted proposed drawing corrections to Figures 4 and 6c for the Examiner's approval in the amendment filed on May 17, 2004. Since the Examiner has not repeated this objection, it is presumed that the proposed drawing corrections have been approved.

3. Claims 1-3, 5, 7-19, 21-31, 33-43 and 45 remain rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement because the some of the elements in prior art Figure 1 and Figure 3a relating apparently to motion compensation have not been described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner's requirement for a more detailed written description of prior art Figure 1, is respectfully traversed. The written description requirement under 35 USC 112, first paragraph, does not extend to prior art. Since prior art Figure 1 is not the invention, and because prior art Figure 1 is well known in the art, no further description is required for one of ordinary skill in the art to make and use the invention of claims 1-3, 5, 7-19, 21-31, 33-43 and 45.

The Examiner's requirement for a more detailed written description of certain elements of Figure 3a, which are common to both prior art Figure 1 and Figure 3a, is respectfully traversed. The claims are directed to the selective enhancement element represented by block 108' in Figure 3a. Exemplary embodiments of this element have been clearly described in detail in the specification. The other elements shown in Figure 3a, i.e., the base layer encoder 102 and

the selective enhancement element denoted by block 108 of the enhancement layer encoder 104, are substantially identical to the base layer encoder 102 and the enhancement layer encoder 104 of prior art Figure 1. The function and operation of these common elements are well known in the art and do not require further description. Moreover, the functional block diagram of Figure 3a includes enough structure for any person of ordinary skill in the art to make or use these base layer and enhancement layer encoder elements shown therein. Thus, the Examiner still has not provided a preponderance of evidence showing why one of ordinary skill in the art would not recognize in Applicants' description, the invention defined by claims 1-3, 5, 7-19, 21-31, 33-43 and 45. Accordingly, withdrawal of the rejection under 35 USC 112, first paragraph, is respectfully urged.

4. Claims 16-19, 21-25 and 41-43 remain rejected under 35 USC 112, second paragraph, as certain limitations in claims 16 and 41 lack a proper antecedent basis. This rejection is no longer applicable to claim 16 (and claims 17-19), as the antecedent basis problem was eliminated by the amendments made to claim 15, from which claim 16 depends. Further, this rejection is not applicable to claims 21-25 because they do not depend from claim 16. Still further, this rejection is also no longer applicable to claim 41 (and claims 42-43), as the antecedent basis problem was corrected by the amendments made to claim 41 to distinguish it over the prior art. Accordingly, withdrawal of the rejection under 35 USC 112, second paragraph is respectfully urged.

5. Claims 1-3, 5, 7-19, 21-31, 33-43 and 45 remain rejected under 35 USC 102(e) as being anticipated by U.S. Patent 6,263,022 to Chen *et al.* (Chen).

This rejection is respectfully traversed as Chen fails to expressly or inherently describe the invention recited in the claims, as presently amended. For example, the method of claim 1 now requires:

> transmitting a first set of criteria for one of said frames; and
>
> transmitting an indicator that causes said first set of criteria to be used for a subsequent one of said frames if a second set of criteria for the subsequent one of said frames is substantially the same as said first set of criteria.

Independent claims 15, 29, 41 and 45 have been similarly amended.

Chen does not expressly or inherently describe the subject matter presently required in the claim 1 and the other claims. The Examiner apparently relies upon column 5, line 54 to column 6, line 25 of Chen for the teaching of an indicator in subsequent ones of the frames when elements contained within subsequent ones of the frames have substantially the same set of criteria as the first set of criteria. Chen states here that:

> FIG. 2 illustrates exemplary video encoder 114 in accordance with one embodiment of the present invention. Video encoder 114 comprises base layer (EL) encoder 210 and enhancement layer (EL) 220. BL encoder 210 receives from video frame source 112 image frames from an original video signal and, through a series of well-known motion estimation, quantization and frequency domain transformation (e.g., discrete cosine transform (DCT)) processes, compresses the frames to produce a base layer bit stream that is sent to encoder buffer 116. The base layer bit stream is frequently sized to match the guaranteed minimum transmission rate through data network 120. In other words, if streaming video transmitter 110 is guaranteed, for example, a 128 kbps service connection through data network 120, then the base layer bit stream at the output of BL encoder 210 transmits at 128 kbps. The compression of the original video frames in BL encoder 210 is a "lossy" process: the frames that are decompressed and reconstructed by video decoder 134 using just the base layer bit stream are of poorer quality than the original video frames.
>
> If data network 120 provides greater than the minimum transmission bandwidth, the quality of the decompressed and reconstructed frames may be improved using the enhancement layer bit stream produced by EL encoder 220. EL encoder 220 comprises residual calculator 230, adaptive quantization controller 240, and bit plane controller 250. Adaptive quantization controller 240 further comprises macroblock/block/alpha image (MBA) bitplane shift controller 260 and frequency bitplane shift controller 270. Residual calculator 230 in EL encoder 220 receives from video frame source 112 image frames from the original video signal and receives from BL encoder 210 decompressed frames derived from the compressed video frames transmitted in the base layer bit stream. Using these inputs, residual calculator 230

> produces a residual signal representing image information missing in the base layer frames as a result of the transform and quantization processes. The output of residual calculator 230 is commonly referred to as the residue, the residual signal, or residual error data.

As can be seen by examining the above portion of Chen, Chen does not describe the subject matter now recited in claim 1 (or the other claims). This portion of Chen only generally describes Chen's video encoder.

The other portions of Chen relied upon by the Examiner also fail to expressly or inherently describe the subject matter now required in claim 1. In particular, column 7, lines 13-54 of Chen describes an adaptive quantization controller which operates in a number ways:

> 1. In one fine-granular scalability (FGS) embodiment of the present invention, there is a flag at the beginning of each block to indicate if the current bit-plane of the whole block is zero or not. If this flag is 0, then adaptive quantization controller 240 does not send the shifting factor, 0's don't contribute to reconstruction of the block.
>
> 2. In one embodiment of the present invention, quantization controller 240 limits the range of shifting factors (e.g., between 0 and 3). If fixed-length code is used to send this shifting factor, then only 2 bits are needed per shifting unit. Variable-length code (VLC) can also be designed to further reduce the amount of overhead.
>
> 3. In one embodiment of the present invention, adaptive quantization controller 240 codes the differentiation signal of the shifting factors, instead of the shifting factors themselves. This saves on overhead if the shifting factors don't change by large amounts from unit to unit.
>
> 4. If the shifting factors are determined solely as a function of the base layer video and other non-enhancement data related information, then the decoder can repeat the determination process and derive the shifting factors used on the encoder side. In this scenario, the shifting factors need not to be sent at all.

> 5. For a video object with an arbitrarily shaped region, each video frame has a corresponding "alpha image" that defines the shape of the object within that particular video frame. In one embodiment of the present invention, adaptive quantization controller 240 uses the alpha image, which defines the shape of the object, as a guidance for the location and amount of bit-plane shifting. There are two types of alpha images: binary and graylevel. For a binary alpha image, each "alpha-pixel" can take a value of 1 or 0. Typically, a 1 indicates that the corresponding pixel is within the video object. Therefore, if adaptive quantization controller 240 has access to the alpha image of a video object, then adaptive quantization controller 240 can perform shifting only on the pixels within the video object. If the decoder also has access to the alpha image (i.e., the shape information is conveyed to the decoder by some means), then adaptive quantization controller 240 does not need to send the overhead information needed for identifying the pixels that are being bit-plane shifted.

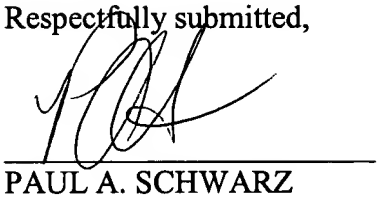
As can be seen by examining the above portion of Chen, the adaptive quantization controller of Chen does not operate to transmit a first set of criteria for one of the frames and to transmit an indicator that causes the first set of criteria to be used for a subsequent frame if a second set of criteria for the subsequent frame is substantially the same as the first set of criteria, as presently claimed. Accordingly, withdrawal of the rejection under 35 USC 102(e) is respectfully requested.

6. Favorable reconsideration of this application is respectfully requested as it is believed that all outstanding issues have been addressed herein and, further, that claims 1-3, 5, 7-19, 21-31, 33-43, and 45 are in condition for allowance, early notification of which is earnestly solicited. Should there be any questions or matters whose resolution may be advanced by a telephone call, the examiner is cordially invited to contact applicants' undersigned attorney at his number listed below.

7. The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17,

which are associated with this communication, or credit any overpayment to Deposit Account No. 50-2061.

Respectfully submitted,



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